



**LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION
AUTHORITY & THE CITY OF LOS ANGELES
DEPARTMENT OF TRANSPORTATION
LOS ANGELES METRO RAPID BUS DEMONSTRATION PROJECT**



- **Type of Project**

Implementation of Metro Rapid Bus in Los Angeles County will be in phases. Initially, MTA and LADOT will design, build, and operate Metro Rapid Bus service in three demonstration corridors. If the demonstration achieves the goals set forth in the program, Metro Rapid Bus will be expanded by approximately 13 corridors. The additional 13 corridors will be selected based on a set of program goals established during the demonstration and will consist of core regional bus service.

Demonstration Corridors (Phase One)

An evaluation of potential demonstration corridors in the East Side, Mid-City, and San Fernando Valley areas of Los Angeles suggested the following street alignments as candidates for Phase One of the Metro Rapid Bus Program. Each alignment was selected based on several criteria, including potential transit demand, proportion of transit dependents, and potential for patrons to make long distance trips.

- Whittier/Wilshire Boulevard (East Side/Mid-City)
- Ventura Boulevard (San Fernando Valley)
- Pico/Broadway/East 1st/Cesar Chavez (Mid-City/East Side)

Expansion Corridors (Phase Two)

Phase Two of the Metro Rapid Bus program expands the concept to 16 corridors. Existing demand on the proposed 13 expansion routes is approximately 300,000 weekday boardings.

- **Method of Operations**

A tiered network of connector bus routes, consisting of inter-community and local services, will be developed to distribute Metro Rapid Bus patrons. Expansion of Metro Rapid Bus to corridors with exclusive right-of-way will also be considered. Operating designs for both on-street arterial bus lanes and transitways will be developed.

Transitway Corridors

The MTA recently completed a transitway feasibility study in coordination with the LADOT. The study analyzed the feasibility of constructing and operating exclusive bus transitways in Los Angeles County. Generally, the study concluded that each of the corridors had suitable available right-of-way that could be converted into exclusive busways. Further studies will be conducted in two of the corridors, the Exposition Boulevard corridor and the San Fernando Valley Burbank/Chandler Boulevard corridor. A description of each follows:

- *Exposition Boulevard Right-of-way* - A bus connection between the Los Angeles Central Business District (LACBD) and the City of Santa Monica, primarily via the abandoned MTA-owned Exposition Boulevard railroad right-of-way (ROW). The ROW segment is approximately 11.0 miles in length and the total route length from the LACBD to Downtown Santa Monica is approximately 18.5 miles.
- *San Fernando Valley Burbank/Chandler Boulevard ROW* - A busway extension of the Metro Red Line that starts at the North Hollywood Station (scheduled to open in May 2000) primarily via the abandoned MTA-owned Southern Pacific Burbank/Chandler ROW. The ROW segment is 13.0 miles in length and the total route length from North Hollywood to Warner Center is 14.0 miles.
- **Service Levels**

Service Frequencies, Hours of Operation, and Schedule Integration - The demonstration phase of Metro Rapid Bus will involve changes in the basic schedule structure for the bus lines serving the corridors. In the Ventura Boulevard and Whittier/Wilshire Boulevard corridors, Metro Rapid Bus will replace the existing limited stop services (Lines 425, 318, 320, and 322).

Table 1
Corridor Service Frequencies

			Proposed Service Frequencies (Minutes)				
Corridor	Service Type		Wkdy Peak	Wkdy Off-Peak	Wkdy Eve	Saturday	Sunday
Whittier/Wilshire	Rapid	Existing Proposed	N/A 3.5-7	N/A 10	N/A 20	N/A 10	N/A 10
	Limited	Existing Proposed	4-10 N/A	10-14 N/A	20-30 N/A	N/A N/A	N/A N/A
	Local	Existing Proposed	4-10 3.5-7	10-14 10	20-30 20	5-6.5 10	7.5 10
	Combined	Existing Proposed	2-5 1.75-3.5	5-7 5	10-15 10	5-6.5 5	7.5 5
Ventura	Rapid	Existing Proposed	N/A 7-10	N/A 10	N/A 20	N/A 15	N/A 15
	Limited	Existing Proposed	7-18 N/A	N/A N/A	N/A N/A	N/A N/A	N/A N/A
	Local	Existing Proposed	7-18 7-10	11 10	30 20	10 15	15 15
	Combined	Existing Proposed	3.5-9 3.5-5	11 5	30 10	10 7.5	15 7.5
Pico/East 1 st	Rapid	Existing Proposed	N/A 5-8	N/A 10	N/A 20	N/A 10	N/A 10
	Local	Existing Proposed	3-4.5 5-8	7.5 10	15 20	6 10	7.5 10
	Combined	Existing Proposed	3-4.5 2.5-4	7.5 5	15 10	6 5	7.5 5

In the Pico/East 1st/Cesar Chavez corridor, Metro Rapid Bus will be the first limited-stop or express bus service along the corridor. Service frequencies presented in Table 1 will be increased from the existing in nearly all cases for both Metro Rapid Bus and local bus services on all three corridors such that customers will have unconstrained choice between service types for the demonstration. Balanced service frequencies are proposed for Metro Rapid Bus and local service.

The anticipated span of Metro Rapid Bus service is intended to provide service during the

extended travel day. This will require hours of operation for Metro Rapid Bus from approximately 5:00 a.m. to 11:00 p.m. on weekdays, with weekend hours from approximately 6:00 a.m. to 10:00 p.m. Outside of these periods, local bus service will serve the entire corridor.

- **Estimated Time Savings**

Metro Rapid Bus service is expected to improve patron travel times by approximately 15-25 percent over existing limited-stop service. This will provide customers with a more attractive trip and allow the MTA to operate more service for the same operating and capital cost.

- **Number and Type of Vehicles Providing Service**

Metro Rapid Bus Vehicles – The demonstration plan requires 116 buses (97 weekday peak buses plus 19 spares) to be dedicated to the Metro Rapid Bus fleet for the duration of the demonstration and not available for assignment on other duties (Table 2). The current plan calls for the buses to be painted in the proposed Rapid Bus Red color at the factory.

Special MTA advertising is proposed for the buses: both the ‘king’ and ‘queen’ exterior advertisement spaces will have displays of the Rapid Bus routing and stations in a ‘Rail line’-like stylized map.

- **Fare Collection and Boarding**

Level Boarding and Alighting - Metro Rapid Bus service will utilize low-floor buses exclusively to provide level platform boarding and alighting. The evidence on low-floor equipment indicates that boarding and alighting times are more reliable and can reduce travel times if used in conjunction with other attributes such as fare prepayment and multiple-door boarding. Low-floor buses also improve access for persons who have difficulty with stairs.

Rapid Bus Station Program - The program will include off-vehicle fare collection (tested in simulation in Phase I; deployed in Phase II), level-platform boarding and alighting, and separation of boarding and alighting.

- **Use of ITS Capabilities**

In a recent study by the LADOT, MTA buses were found to spend approximately 20 percent of their service hours stopped at intersections, 23 percent of the time boarding and alighting passengers (dwell time), 5 percent of the time in traffic congestion, and the remaining time moving while in service. As presented by the LADOT, traffic congestion (during the AM and PM peak periods) is clearly not as serious a problem as is generally believed. Therefore, improvements in transit speed, reliability, and on-time performance must focus on the delay caused at bus stops and traffic signals.

Table 2
Corridor Peak Vehicle Requirements

Corridor	Service Type		Wkdy Peak	Saturday	Sunday
Whittier/Wilshire	Rapid	Existing Proposed	N/A 57	N/A 27	N/A 27
	Local/Limited	Existing Proposed	101 72	46 42	46 42
	Combined	Existing Proposed	101 129	46 69	46 69
Ventura	Rapid	Existing Proposed	N/A 16	N/A 10	N/A 10
	Local/Limited	Existing Proposed	62 20	33 12	20 10
	Combined	Existing Proposed	62 36	33 22	20 20
Pico/East 1 st	Rapid	Existing Proposed	N/A 24	N/A 9	N/A 9
	Local	Existing Proposed	41 29	23 11	18 11
	Combined	Existing Proposed	41 53	23 20	18 20
Total	Rapid	Existing Proposed	N/A 97	N/A 46	N/A 46
	Local	Existing Proposed	204 121	102 65	84 63
	Combined	Existing Proposed	204 218	102 111	84 107

Consistent with the above findings, attributes planned for Phases I and II of the Los Angeles Metro Rapid Bus program include AVL/Bus Signal Priority. The use of an AVL-based bus signal priority system will have a significant travel time benefit to MTA customers and will result in improved operational efficiency and effectiveness for Metro Rapid Bus. Deployment of the LADOT's loop-transponder detector (LTD) system on the first two Metro Rapid Bus corridors (Whittier/Wilshire and Ventura) is recommended in the demonstration phase of the program. The advanced bus signal priority system will also provide real time bus location information for fleet management and passenger information displays at major stations.

- **Traffic Engineering and Infrastructure**

Infrequent Stops - MTA currently operates two levels of arterial bus service: local-stop and limited-stop. Typically, local stops are spaced every 0.25 miles or less, while limited-stop services have an average spacing of approximately 0.65 miles. Rapid Bus stop spacing will focus primarily on major destinations and transfer points, with stop intervals lengthened to approximately every mile. This compares favorably with MTA's Metro Rail, ranging from 1.1 to 1.6 miles between Stations. Rapid Bus service will replace existing limited-stop service, with existing local bus service continuing along the corridor.

Simple Route Layout - Current MTA bus service has evolved into a complex and often confusing array of different service branches, service types, and short turns in an effort to both customize the service to market niches and to maximize cost efficiency. A simple route layout is proposed for Rapid Bus where every trip is the same, without exception. Rapid Bus seeks to build the same customer confidence in a consistent route structure enjoyed by fixed guideway modes.

Color-Coded Buses and Stations - Station and bus image concepts share visual cues, including colors, and a consistent graphics theme. The ability to distinguish between Rapid Bus vehicles and regular transit bus services at a distance, recognize the Stations from one or more blocks away, and recognize the link between Rapid Bus service and Stations allows customers to make informed choices.

Station Stops - Fifty-five locations have been identified in the demonstration phase as Metro Rapid Bus Stations (the Stations will be paired with one in each direction). Initially, two new Rapid Bus Stations will be constructed at each of six locations. The prototype stations will be designed to test their ability to facilitate handling of the higher passenger loads associated with Rapid Bus operation and expedite boarding and alighting activity. The stations will also incorporate a high level of customer information (real-time "next-bus" displays), security, and comfort, as well as urban streetscape improvements to improve the environment around the Station. They will also allow for local community customization. Deployment of the Stations will require separation of local and Rapid Bus stops in order to avoid delays to Metro Rapid Bus and may require additional curb space in some instances.

The remaining 49 intersections will receive upgrades during the demonstration period, including distinctive Rapid Bus identification, improvements in both passenger amenities and information, and enhanced areas around the stop in order to make Metro Rapid Bus more attractive to customers and local residents and businesses.

The program calls for the upgrading of bus stops to "Station Stops", with a correspondingly high level of comfort, amenity, service, and security. The station stops are intended to help establish the identity of Rapid Bus service through their own visual language and their integration with the appearance of the buses. There are a variety of specific improvements called for in the program:

- Advanced passenger information : real-time and possibly multi-lingual displays
- Enhanced passenger amenities: improved shelters, benches, landscaping, and trash receptacles
- Improved security lighting and security surveillance
- Increased sidewalk width and streetscape improvements
- Enhanced pedestrian crosswalks
- Stronger, consistent visual identification common to station and vehicle

2. Problems Addressed by the Project

The purpose of Metro Rapid Bus is to address the need for faster travel choices for bus riders, especially the transit-dependent, on an interim basis prior to the completion of the Eastside and Mid-City rail segments of the Los Angeles Metro Red Line. Countywide expansion of the Program is predicated on the performance and public acceptance of the demonstration project.

3. Implementation and Operations Schedule

Staging of each corridor is as follows:

- Whittier/Wilshire Blvd: March to December 2000
- Ventura Blvd: May to December 2000 (coincides with Red Line opening)
- Pico/East 1st/Chavez: July to December 2000

4. Funding Plan

Estimated Operating Expenses - Operating expenses for the demonstration program are estimated at \$17.9 million annually and are based on the incremental increase in vehicle service hours, vehicle service miles, and peak vehicles. They were estimated by developing preliminary operating schedules for each of the three demonstration corridors.

Several operating costs are beyond basic service operation. Operations support costs include special operator training, additional field support, enhanced vehicle maintenance, station/stop maintenance and repair, and technology maintenance. Customer service and marketing are also included. A contingency of 10 percent has been included based on the following:

- Research and development nature of the demonstration project
- Contingency for unforeseen capacity needs due to increased ridership
- Unforeseen operating costs (e.g., additional training or equipment)
- Testing flexibility with service frequencies

Estimated Capital Expenses - Total estimated capital expenses for the demonstration program are \$14.9 million. The principal capital costs are associated with the acquisition of 17 additional buses, passenger Stations and enhanced stops, and technology support. A contingency of 10 percent has also been budgeted. Expenses associated with bus signal prioritization, to a great

extent, have already been funded through the MTA's Call for Projects process.

5. Issues of Concern re: planning, design, implementation and/or operations

Countywide expansion of the Program is predicated on the performance and public acceptance of the demonstration project.

6. Current Status

Expected start of operations is in March 2000.

7. Contacts

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